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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/724,025	11/28/2000	David Herring	3882-3	6894
29858 7590 05/30/2007 THELEN REID BROWN RAYSMAN & STEINER LLP 900 THIRD AVENUE NEW YORK, NY 10022			EXAMINER DIXON, THOMAS A	
			ART UNIT 3628	PAPER NUMBER
			MAIL DATE 05/30/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/724,025	HERRING ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thomas A. Dixon	3628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2007.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-29 and 62-69 is/are pending in the application.
- 4a) Of the above claim(s) 30,31 and 70-78 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-8,10-17,20-29,62,63 and 65-69 is/are rejected.
- 7) ☒ Claim(s) 5,9,18,19 and 64 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Election/Restrictions***

2. Applicant's election of group 1 in the reply filed on 6/15/06 is acknowledged.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

This application contains claims 30-61, and 70-78 drawn to an invention nonelected with traverse in the reply filed on 6/15/06. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with representative Ostrow on 27 October 2003.

In the claims:

Claim 62, line 7, change --ser-- to --set--.

### ***Response to Arguments***

4. Applicant's arguments of 3/21/07 have been considered.

As per Applicant's arguments with regard to the 35 USC § 101 Claims 1, 16, 29, 62 are convincing as the probability is seen to be useful, concrete and tangible.

However, the rejection of claim 28 is maintained.

Though applicant argues that it is improper to read limitations from the specification into the claims, the claims must have support in the specification, and claims directed to an Apparatus must be distinguished from the prior art in terms of structure rather than function, *In re Danly* 263 F.2d 844, 847, 120 USPQ 582, 531 (CCPA 1959).

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1657 (bd Pat. App. & Inter. 1987).

The structural limitations of claim 28 are seen to be code per-se and not true structure as supported by the specification page 28, the specification does not recite a structural embodiment.

As per Applicant's arguments to the 35 USC § 102 rejections. Applicant argues that Ho does not disclose a service change time window. The examiner disagrees, and see that Ho's sampling activity based on historical data is equivalent to applicant's claimed time change window as the working and non-working state are seen as equivalent to Ho's anomalies.

As per Applicant's arguments to the Official Notice. Applicant does not argue the substance of the Official Notice, but simply argues that the Official Notice does not overcome the deficiencies of the Ho reference, and is thus an improper challenge and an admission that the features of the Official Notice are acceptable prior art.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 28 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

For a claimed invention to be statutory, the claimed invention must produce a useful, tangible and concrete result. An invention which is eligible for patenting under 35 U.S.C 101, is in the "useful arts" when it is a machine, manufacture, process or composition of matter, which produces a useful, concrete and tangible result. The fundamental test for patent eligibility is thus to determine whether the claimed invention

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produces a useful tangible and concrete result. See *AT&T v. Excel Communications Inc.*, 172 F.3d at 1358, 50 USPQ 2d at 1452 and *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d at 1373, 47 USPQ 2d at 1601 (Fed. Cir. 1998). The test for practical application as applied by the examiner involves the determination of the following factors.

a) “useful” – The Supreme Court in *Diamond v. Diehr* requires that the examiner look at the claimed invention as a whole and compare any asserted utility with the claimed invention to determine whether the asserted utility is accomplished.

Applying utility case law the examiner will not that:

- i. utility need not be expressly recited in the claims, rather it may be inferred.
- ii. if the utility is not asserted in the written description, then it must be well established.

b) “tangible” – Applying *In re Warmerdam*, 33 F.3d 1354, 31 UAPQ 2d 1754 (Fed. Cir. 1994), the examiner will determine whether there is simply a mathematical construct claimed, such as a disembodied data structure and method of making it. If so, the claim involves no more than manipulation of an abstract idea and is, therefore, nonstatutory under 35 U.S.C 101. In *Warmerdam*, the abstract idea of a data structure became capable of producing a useful result when it was fixed in a tangible medium, which enabled its functionality to be realized.

c) "concrete" – Another consideration is whether the invention produces a "concrete" result. Usually, this question arises when a result cannot be assured. An appropriate rejection under 35 U.S.C 101 should be accompanied by a lack of enablement rejection, because the invention cannot operate as intended without undue experimentation.

As per Claims 28.

The claim is seen to be non-statutory because as code per-se it is not one of the statutory categories, they do not produce a tangible result.

A system claim is distinguished by its structure and software must be embodied on a computer readable medium and be executable.

The system is seen to be code per se as it is a software suite as disclosed on page 18 of the specification.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-3, 6, 11-16, 20-21, 23- 29, 62, 65, 67-69 are rejected under 35 U.S.C. 102(e) as being anticipated by Ho (6,597,777).

As per Claims 1, 29.

Ho ('777) discloses:

determining a service change time window based at least in part upon a change in service quality between a first working state and a second, non-working state, and upon a change in service usage amount, the service change time window encompassing at least part of a service outage, see column 3, lines 27-32;

retrieving data representing a detected event and a time in which the event occurred, see column 3, line 11-18 and column 4, line 45;

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computing a probability that the detected event caused the service change based at least in part on a correlation between the event time and the service change time window, see column 3, lines 20-27.

As per Claim 2, 20, 65.

Ho ('777) further discloses:

determining the service change time window comprises determining a service failure time window based upon the change in service quality and narrowing the service failure time window to the service change time window based upon the service usage amount measured during that service failure time window, see column 3, lines 11-35.

As per Claim 3, 21.

Ho ('777) further discloses:

the service quality is monitored through periodic polling of the service quality, and comprising determining the service failure time window as bounded by a polled point of the first working state and a polled point of the second non-working state, see column 3, lines 27-40.

As per Claim 6.

Ho ('777) further discloses:

storing historical data associating occurrences of prior events with prior service changes, and wherein the probability that the detected event caused the service change comprises computing the probability at least in part based on historical data, see column 3, lines 18-40.

As per Claim 11, 23, 67.

Ho ('777) further discloses:

the service comprises service over a communication network and wherein the detected event comprises a network event, see column 3, lines 9-11.

As per Claim 12, 24, 68.

Ho ('777) further discloses:

the service comprises service provided by an application program and wherein the detected event comprises an application program event, see column 3, lines 11-14.

As per Claim 13, 25, 69.

Ho ('777) further discloses:

the service change is a service outage comprising determining the service change time window as a change in service quality from a first working state to a second, non-working state, see column 3, lines 9-49.

As per Claim 14, 26.

Ho ('777) further discloses:



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the service change is a service recovery comprising determining the service change time window as a change in service quality from a second, non-working state to the first, working state, see column 3, lines 9-49.

As per Claim 15, 27.

Ho ('777) further discloses:

determining the service change time window comprises detecting a change in service quality by detecting a step of change in measured usage, see column 3, lines 11-35.

As per Claims 16, 62.

Ho ('777) discloses:

determining a service change time window based at least in part upon a change in service quality between a first working state and a second, non-working state, and upon a change in service usage amount, the service change time window encompassing at least part of a service outage, see column 3, lines 27-32;

detecting occurrences of a set of events within a given time prior to and during the service change time window, each occurrence of an event being associated with a time at which the event occurred, see column 3, line 11-18 and column 4, line 45;

computing a probability that the detected event caused the service change based at least in part on a correlation between the event time and the service change time window, see column 3, lines 20-27.

As per Claim 28.

Ho ('777) discloses:

a service monitor for monitoring quality of service on the network, see column 3, lines 9-11;

a usage meter for measuring usage of a network, see column 3, line 11-18 and column 4, line 45;

an event detector for detecting network events and times at which the network events occur, see column 3, line 11-18 and column 4, line 45;

setting a service change time window based upon data received from the service monitor or usage meter, the service change time window encompassing at least part of an occurrence of a service outage in the network, see column 3, lines 28-39;

a probable cause engine, coupled to receive data from the service monitor, usage meter and the event detector, see column 3, lines 41-44, for:

setting a service change time window based upon data received from the service monitor or usage monitor, the service change time window encompassing at least part of an occurrence of a service outage in the network, see column 3, lines 41-44;

determining which of the network events detected by the event detector is the most likely cause of a service change based at least in part of the relations of the detected network event times to the service change time window, see column 3, lines 41-44.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4, 7, 8, 10, 22, 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho (6,597,777) in view of Official Notice.

As per Claim 4.

Ho ('777) does not specifically disclose:

computing the probability comprises computing the probability using at least in part a time weighting function which decreases exponentially with the distance between the event time and the service time window.

Official notice is taken that it is well known that the farther timewise one event is from another event that the less likely it becomes that one event will have had a causal relationship on another event.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a weighting function which decreases the service time window because the farther timewise one event is from another event that the less likely it becomes that one event will have had a causal relationship on another event.

As per Claim 7.

Ho ('777) further discloses:

storing historical data comprises storing data representing instances in which prior events occurred within prior service change time windows, see column 3, lines 18-40.

Ho ('777) does not specifically disclose:

wherein computing the probability of the detected event as the cause of the service change comprises using at least in part a positive occurrence weighting function which increases the probability of the detected event as the cause of the service change based on instances in the historical data in which a prior event of a type identical to the detected event occurred within a prior service change time window.

Official notice is taken that it is well known that the closer timewise one event is from another event that the more likely it becomes that one event will have had a causal relationship on another event.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a weighting function which increases the service

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time window because the closer timewise one event is from another event that the more likely it becomes that one event will have had a causal relationship on another event.

As per Claim 8.

Ho ('777) further discloses:

storing historical data comprises storing data representing instances in which prior events were identified as having caused prior service data changes, and wherein computing the probability that the detected event caused the service change comprises using at least in part a historical weighting function which increases the probability of the detected event as the cause of the service change based on instances in the historical data in which a prior event of a type identical to the detected event was identified as having caused a prior service change.

Official notice is taken that it is well known that the an analogy by definition is an event are compared to historical events to make conclusions a causal relationship of one event on another event.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a historical weighting function which increases the probability of the detected event as the cause of the service change based on instances in the historical data in which a prior event of a type identical to the detected event was identified as having caused a prior service change the current events because analogies are old and well known.

As per Claim 10, 22, 66.

Ho ('777) does not specifically disclose the total of all computed probabilities is 1.

Official Notice is taken that it is a mathematical law that probability is a number between 0 and 1.

8. Claims 17, 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ho (6,597,777) in view of St Regis Paper Co. v. Bemis Co, 193 USPQ 8,11; 549 F2d

833 (7th Cir. 1977); In re Harza, 124 USPQ 378, 380; 274 F2d 669(CCPA 1960).

As per Claim 17, 63.

Ho ('777) does not specifically disclose computing the probability distribution for the set of events comprises computing the probability distribution using a first weighting function which is the product of two or more weighting functions.

Official Notice is taken that it is old and well known in the probability to use weighting functions and In re Harza teaches that to make duplicate for multiple effect is obvious.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use multiple weighting functions for the benefit of taking multiple variables into account in a probability distribution.

***Allowable Subject Matter***

9. Claims 5, 9, 18-19, 64 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

As per Claim 5, 18, 64.

Ho ('777) does not specifically disclose:

determining whether one or more other events of a type identical to the detected event occurred and wherein computing the probability using at least in part a false occurrence weighting function which decreases the probability of the detected event as the cause of the service change for instances in which the detected event occurred outside the service change time window.

As per Claims 9.

Ho ('777) does not specifically disclose:

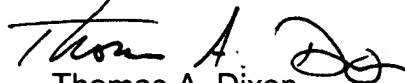
retrieving data representing a plurality of detected events and corresponding event times, and wherein computing the probability comprises computing probabilities of each of the plurality of detected events.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Dixon whose telephone number is (571) 272-6803. The examiner can normally be reached on Monday - Thursday 6:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hayes can be reached on (571) 272-6708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Thomas A. Dixon  
Primary Examiner  
Art Unit 3628

May 07